



February 16, 2005  
Project A77-01

Mr. Dane Mathis  
Regional Water Quality Control Board  
Central Valley Region  
Fresno Branch Office  
1685 "E" Street  
Fresno, CA 93706-2020

**Re: Results of January, 2005 Quarterly Groundwater Monitoring and Air Quality Monitoring, Art's Mercantile, Fresno, California, Case #5T10000148, Claim #1733**

Dear Mr. Mathis:

HerSchy Environmental is pleased to present the results of the most recent quarterly groundwater monitoring event for the above-referenced property along with results of the last quarter of monitoring and operation of the soil vapor extraction system (SVES). The site is located at 2082 West Whites Bridge Road, which is on the northeast corner of West Whites Bridge Road and Hughes Avenue in Fresno, Fresno County, California (Figure 1).

#### **PREVIOUS WORK**

Three underground storage tanks (USTs) were removed from the site in November, 1988. During the UST removal, samples retrieved by Twinning Laboratories, Inc. determined that contamination was found beneath two of the three USTs. In December, 1989 SSB Environmental Consultants, Inc. drilled two initial soil borings to determine the extent of pollutants. Results of this investigation lead to additional borings and the installation of six monitoring wells in 1994. The monitoring wells were sampled through 1998 at which time additional work was performed which included the installation of four vapor extraction wells. An initial soil vapor extraction test (VET) was performed in December, 1998. A corrective action plan was submitted by Raley & Associates in April, 1999 which included a detailed history of work performed up to that date and proposed the installation of a soil vapor extraction system (SVES). Grisanti and Associates took over remediation at the site in September, 2001; an electric catalytic oxidizer was installed soon after and groundwater monitoring continued. The thermal oxidizer installed and operated by Grisanti and Associates was removed prior to March 2003, during this same month Herschy Environmental, Inc. took over remediation efforts.

An additional VET was necessary to acquire data needed to evaluate remaining pollutants and further remediation. The VET was performed by HerSchy Environmental,



Inc. in September, 2003, results are presented in the November 17, 2003 correspondence, *"Results of the September, 2003 Vapor Extraction Test and the October, 2003 Quarterly Monitoring..."* A replacement thermal oxidizer was installed as was proposed in the January 29, 2004 correspondence, *"Corrective Action Plan, Art's Mercantile, Fresno, California, Case #5T10000148, Claim #1733"* prepared by Herschy Environmental. Installation and startup of the SVES was delayed due to complications with the power supply, details of the initial operation of the SVES can be found in the July 30, 2004 correspondence, *"Air Quality Startup Inspection Results for Art's Mercantile, Fresno, Fresno County, California, Permit No. C-4338-1-0"* prepared by HerSchy Environmental Inc.

## **METHODS OF INVESTIGATION-Groundwater Monitoring**

### Groundwater Sampling Procedures

Five out of the six monitoring wells were purged and sampled using the Waterra pumping system on January 25, 2005 (MW-1 through MW-5). MW-6 was not located to be sampled. Prior to initiating groundwater sampling, the monitoring wells were measured for static water level and total depth using an electric sounder. Depth to groundwater was recorded to the nearest 0.01 feet on field sampling data sheets. The groundwater elevations in the monitoring wells were calculated by subtracting the measured depth to groundwater from the surveyed well elevation. The depth to groundwater, total depth of the well, and well diameter were used to calculate the purge volume for each respective well.

Over three casing volumes were purged from each monitoring well prior to sampling. Physical characteristics (temperature, pH, electrical conductivity, and turbidity) were recorded on the sampling data sheets during the initial stages of purging and again prior to sampling. Samples were collected in paired 40-milliliter bottles fitted with Teflon-lined septa. The bottles were filled completely to form a positive meniscus and checked after capping to ensure that no air bubbles were present in the sampling vial.

Groundwater samples were placed in a cooler chest with frozen gel packs ("blue ice") immediately after sampling. Samples were stored, transported, and delivered under chain-of-custody documentation. Groundwater field sampling data sheets are presented in Appendix A.

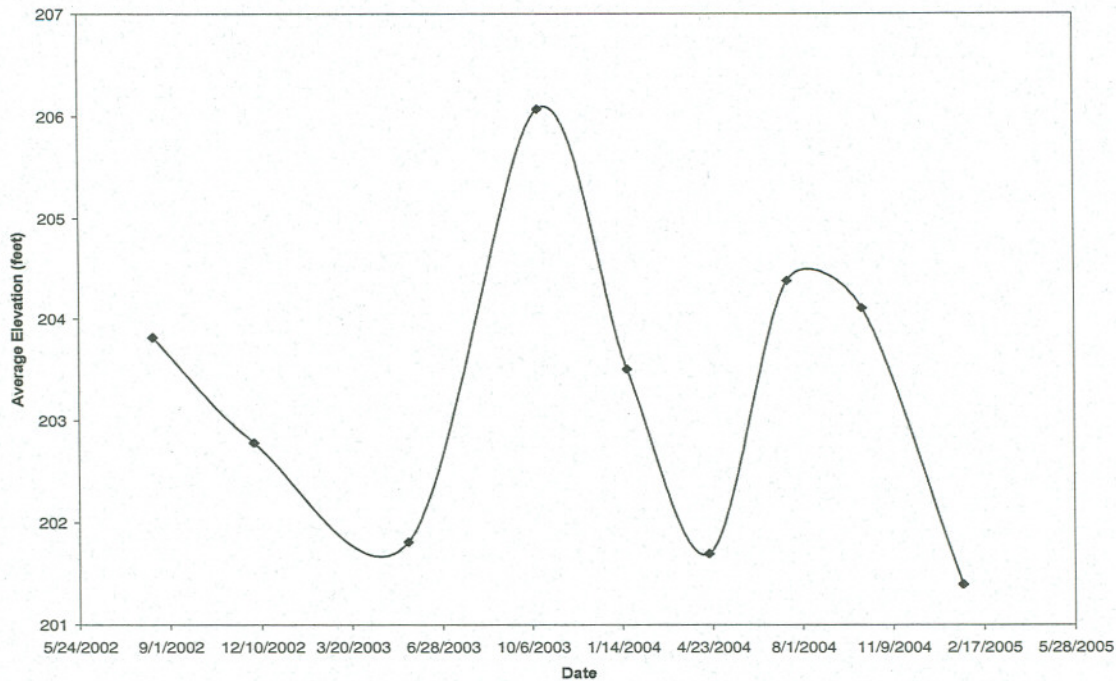
## **RESULTS OF INVESTIGATION-Groundwater Analysis**

### Groundwater Conditions

Plate 1 below shows graphical representation of the average groundwater elevation over the past two years of monitoring. These data show seasonal fluctuations opposite of seasonal precipitation. A possible explanation for this is the presence of a nearby canal that contains more water during the summer months and recharges the local water table.



**Plate 1**  
**Average Groundwater Elevations**  
**August, 2002 through January, 2005**



First encountered groundwater is currently at an average depth of 75.78 feet or an average elevation of 201.40 feet. This is a decrease of 2.70 feet from the October, 2004 event. Groundwater flow direction is north 25° degrees east, with a gradient of 0.00076. Groundwater conditions over the last year of monitoring are summarized in Table 1 below, groundwater conditions during the most recent monitoring event are presented graphically in Figure 1.

**Table 1**  
**Groundwater Conditions, Art's Mercantile, Fresno**

Well No.	Elevation	Depth to GW	GW Elevation
<b>April 19, 2004:</b>			
MW-1	277.01	75.26	201.75
MW-2	277.52	75.81	201.71
MW-3	277.17	75.40	201.77
MW-4	276.80	75.23	201.57
MW-5	277.37	75.70	201.67
MW-6	276.52	74.81	201.71

Flow Direction =N. 77 E.; Gradient = .00087



**Table 1 (continued)**  
**Groundwater Conditions, Art's Mercantile, Fresno**

Well No.	Elevation	Depth to GW	GW Elevation
<b>July 16, 2004:</b>			
MW-1	277.01	72.67	204.34
MW-2	277.52	73.03	204.49
MW-3	277.17	72.69	204.48
MW-4	276.80	72.15	204.65
MW-5	277.37	73.19	204.18
MW-6	276.52	72.41	204.11
Flow Direction = N. 5 E.; Gradient = .086			
<b>October 7, 2004:</b>			
MW-1	277.01	72.92	204.09
MW-2	277.52	73.30	204.22
MW-3	277.17	72.90	204.27
MW-4	276.80	72.50	204.30
MW-5	277.37	73.47	203.90
MW-6	276.52	72.68	203.84
Flow Direction = N. 9 W.; Gradient = .0015			
<b>January 25, 2005:</b>			
MW-1	277.01	75.60	201.41
MW-2	277.52	76.11	201.41
MW-3	277.17	75.71	201.46
MW-4	276.80	75.41	201.39
MW-5	277.37	76.05	201.32
MW-6	276.52	--	--
Flow Direction = N. 25 E.; Gradient = .00076			

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Elevations in feet

#### Laboratory Analytical Results

Groundwater samples were submitted to a California certified laboratory and analyzed for gasoline-range total petroleum hydrocarbons (TPHg), benzene, toluene, ethylbenzene, and xylenes (BTEX), and methyl tertiary butyl ether (MTBE). Analysis was performed using EPA method 8015M for TPHg and EPA method 8020 for BTEX and MTBE. Samples were prepared using EPA method 5030. Laboratory analytical results are summarized in Table 2. Certified analytical reports and chain-of-custody documentation are presented in Appendix B.



**Table 2**  
**Laboratory Analytical Results, Art's Mercantile, Fresno**

Well No.	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
<b>April 19, 2004:</b>						
MW-1	ND	ND	ND	ND	ND	ND
MW-2	ND	ND	ND	ND	ND	ND
MW-3	ND	ND	ND	ND	ND	ND
MW-4	ND	ND	ND	ND	ND	ND
MW-5	ND	ND	ND	ND	ND	ND
MW-6	ND	ND	ND	ND	ND	ND
<b>July 16, 2004:</b>						
MW-1	ND	ND	ND	ND	ND	ND
MW-2	ND	ND	ND	ND	ND	ND
MW-3	ND	ND	ND	ND	ND	ND
MW-4	ND	ND	ND	ND	ND	ND
MW-5	ND	ND	ND	ND	ND	ND
MW-6	ND	ND	ND	ND	ND	ND
<b>October 7, 2004:</b>						
MW-1	ND	ND	ND	ND	ND	ND
MW-2	ND	ND	ND	ND	ND	ND
MW-3	ND	ND	ND	ND	ND	ND
MW-4	ND	ND	ND	ND	ND	ND
MW-5	ND	ND	ND	ND	ND	ND
MW-6	ND	ND	ND	ND	ND	ND
<b>January 25, 2005:</b>						
MW-1	ND	ND	ND	ND	ND	ND
MW-2	ND	ND	ND	ND	ND	ND
MW-3	ND	ND	ND	ND	ND	ND
MW-4	ND	ND	ND	ND	ND	ND
MW-5	ND	ND	ND	ND	ND	ND
MW-6	NA	NA	NA	NA	NA	NA

All results presented in parts per billion (ppb)

\* MTBE results by EPA method 8260

ND= below detectable concentrations

There were no detectable concentrations of gasoline constituents in any of the wells sampled on January 25, 2005. None of the analytes have been detected in groundwater samples for the past six consecutive quarters.

## **METHODS OF INVESTIGATION – Air Quality Monitoring**

### Monitoring Procedures

The soil vapor extraction system (SVES) at this site employs a Frontier Environmental Services, Inc. electric/catalytic thermal oxidizer for air abatement. The SVES was started up in late June, 2004, utilizing a California Air Resources Board (CARB) certified portable diesel generator to supply electricity for the system. Electrical



service was established by the middle of August and the generator was removed from the site on September 8, 2004.

Air monitoring is conducted using a photo-ionization detector (PID) to measure volatile organic compound (VOC) concentrations at the influent and effluent lines of the SVES and a portable hot-wire air flow meter to measure the air flow through the SVES. In accordance with the permit to operate issued by the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) the SVES is monitored on a monthly basis. In addition, vapor samples are collected from the influent vapor sampling port at each monthly monitoring event. These samples are collected by connecting a vacuum pump to the influent vapor sampling port and pumping the sample in a tedlar bag. The tedlar bag is then sealed and placed in a cooler chest for protection from sunlight.

Vapor samples are submitted to a California-certified laboratory for analysis. Samples are prepared by EPA method 5030, and analyzed for TPHg and BTEX by EPA method 8015M and for MTBE by EPA method 8020. Vapor samples are analyzed by a laboratory certified in these methodologies. Vapor samples were collected, transported, and delivered under chain-of-custody documentation.

## **RESULTS OF INVESTIGATION – Air Quality Analysis**

Parts per million by volume (ppmv) of VOCs, as TPHg, can be converted to micrograms per liter ( $\mu\text{g/L}$ ) by multiplying by 5.1 based on the molecular weight of TPHg. One liter is equal to 0.03531 cubic feet. To calculate VOCs in pounds per liter (lbs/L), the formula is as follows:

$$(\mu\text{g/L})(2.2 \text{ lbs}/1000000000 \mu\text{g}) = \text{lbs/L VOCs}$$

Converting lbs/L to lbs/day:

$$(\text{lbs/L})(1 \text{ l}/0.03531 \text{ ft}^3)(\text{ft}^3/\text{m})(60 \text{ min/hr})(8 \text{ hr}) = \text{lbs}/8\text{-hour day VOCs}$$

During this time period the SVES operated at an average air flow of approximately 83 cubic feet per minute (cfm). By this method we estimate the SVES has removed over 549 pounds of VOCs from the soil. Given that one gallon of product weighs 6.17 pounds, approximately 89 gallons of product have been removed as soil vapor since July 12, 2004. This estimate is lower than that reported last quarter due to the fact that it is based on laboratory results rather than field readings.

Table 3 summarizes the results of our monthly air monitoring events for the period of July 12, 2004 through January 19, 2005 based on laboratory results for TPHg. Air monitoring field data sheets are presented in Appendix C. Field data Sheets and Laboratory results for the period of July 12, 2004 through September 2, 2004 were presented previously in our October 22, 2004 correspondence "Results of October, 2004 Quarterly Groundwater Monitoring and Air Quality Monitoring, Art's Mercantile, Fresno, California, Case #5T10000148, Claim #1733".



**Table 3**  
**Air Quality Monitoring Results for Art's Mercantile**

Date	Hours of Operation	Influent VOC	Effluent VOC	Air Flow	Destruction Efficiency	Effluent Release (lbs/day)	VOCs Removed (lbs/day)	VOCs Removed (lbs)
7/12/2004	447.30	91 <sup>^</sup>	21	71	76.92%	0.69	2.96	55.10
8/11/2004	422.00	73 <sup>^</sup>	0	100	100.00%	0.00	3.34	58.73
9/2/2004	448.80	200 <sup>^</sup>	5.1*	142	97.45%	0.33	12.99	243.01
10/18/2004	1104.80	63	3.7*	105	94.13%	0.18	3.03	139.33
11/2/2004	355.90	24	0*	73	100.00%	0.00	0.80	11.89
12/8/2004	360.20	19	0	27.15	100.00%	0.00	0.24	3.54
1/19/2005	1008.50 <sup>+</sup>	30	32	65	-6.67%	0.96	0.89	37.49
							Total VOCs removed	549.10
							Equivalent Gallons of Gasoline	89

VOC concentrations in parts per million by volume (ppmv)

Air flow in cubic feet per minute (cfm)

<sup>^</sup> From laboratory results presented October 22, 2004

\* Readings were taken by PID in the field; all other influent/effluent concentrations are from lab results

<sup>+</sup> Calculated from last date and time based on 100% operation

During the January 19, 2005 sampling event effluent TPHg concentrations were above influent concentrations resulting in a calculation of negative destruction efficiency; however, ethylbenzene and total xylenes were also detected in the influent at concentrations of 0.15 ppmv and 1.6 ppmv respectively, the corresponding effluent concentrations were at non detect and 0.71 ppmv showing that the unit is effectively removing these constituents. Table 4 below summarizes the laboratory analytical results from monthly influent vapor samples. Laboratory analytical results and chain-of-custody documentation for the latest four months of monitoring are presented in Appendix D.

**Table 4**  
**Influent VOC Concentrations**

Date	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
7/12/2004 <sup>^</sup>	467	ND	11	7.2	70	ND
8/11/2004 <sup>^</sup>	380	ND	2.6	4.8	49	ND
9/2/2004 <sup>^</sup>	1000	ND	ND	7.7	88	ND
10/18/2004	260	ND	1.2	1.9	19	ND
11/2/2004	96	0.84	6.0	2.1	13	ND
12/8/2004	80	ND	0.78	ND	4.5	ND
1/19/2005	120	ND	ND	0.66	6.8	ND

Concentrations are presented in µg/L

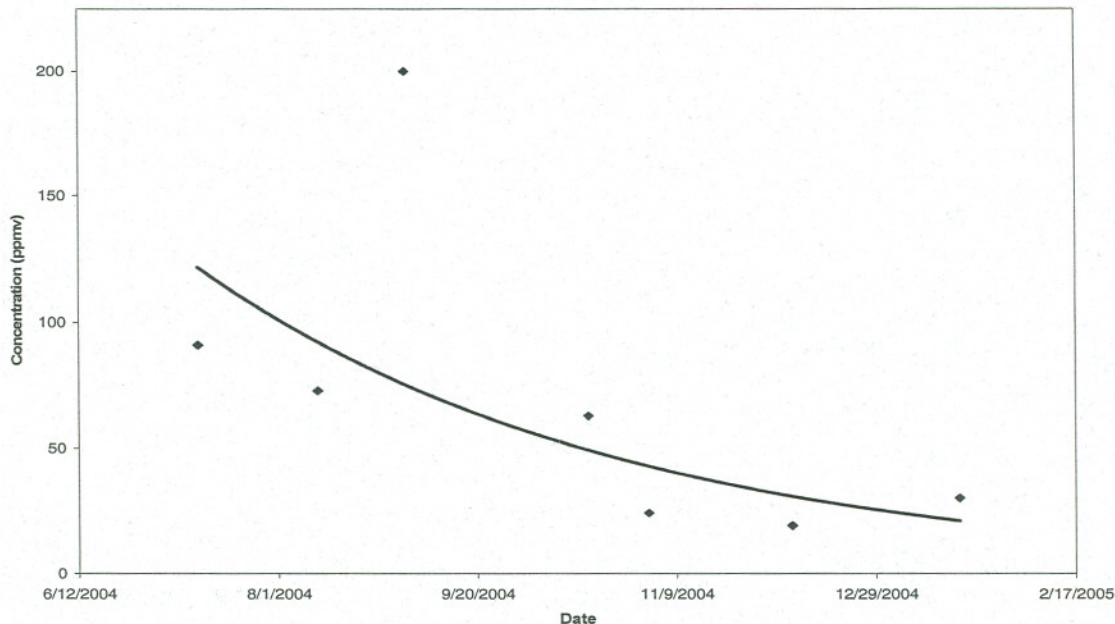
<sup>^</sup> Laboratory results presented October 22, 2004

ND indicates contaminant is below detection limit



Influent TPHg results are presented graphically in Plate 2, along with an estimate of the trend in influent concentrations.

**Plate 2**  
**Influent TPHg Concentrations**  
**July, 2004 through January, 2005**



The concentration of TPHg being extracted from the soil is decreasing. Influent concentrations have dropped to levels averaging 34 ppmv over the last four months. At these levels it is no longer cost effective to operate the thermal oxidizer.

## CONCLUSIONS AND RECOMMENDATIONS

HerSchy Environmental Inc. recommends replacing the thermal oxidizer with a granular activated carbon filtration system. Samples collected from the influent air stream of the SVES contain no detectable concentration of the most volatile and mobile gasoline constituent MTBE. These conditions warrant the discontinuation of the thermal oxidizer operation, as the influent concentrations are insufficient to cost effectively operate the unit. However, a granular activated carbon (GAC) system would be cost-effective and appropriate. The system would consist of a blower motor pushing the air stream through two poly tanks containing 2,000 pounds each of carbon. Upon approval, HerSchy Environmental will begin the permitting process for the carbon system.

To help assess the progress of remediation efforts groundwater monitoring should continue on a quarterly basis. The next quarterly groundwater monitoring event is currently scheduled for mid April, 2005.

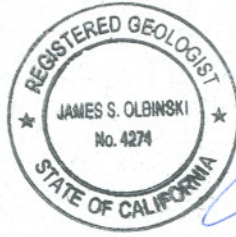


If you have any questions or require additional information, please contact us at the letterhead address or at (559) 641-7320.

With best regards,  
HerSchy Environmental, Inc.

*Shannon Lodge*

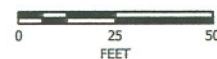
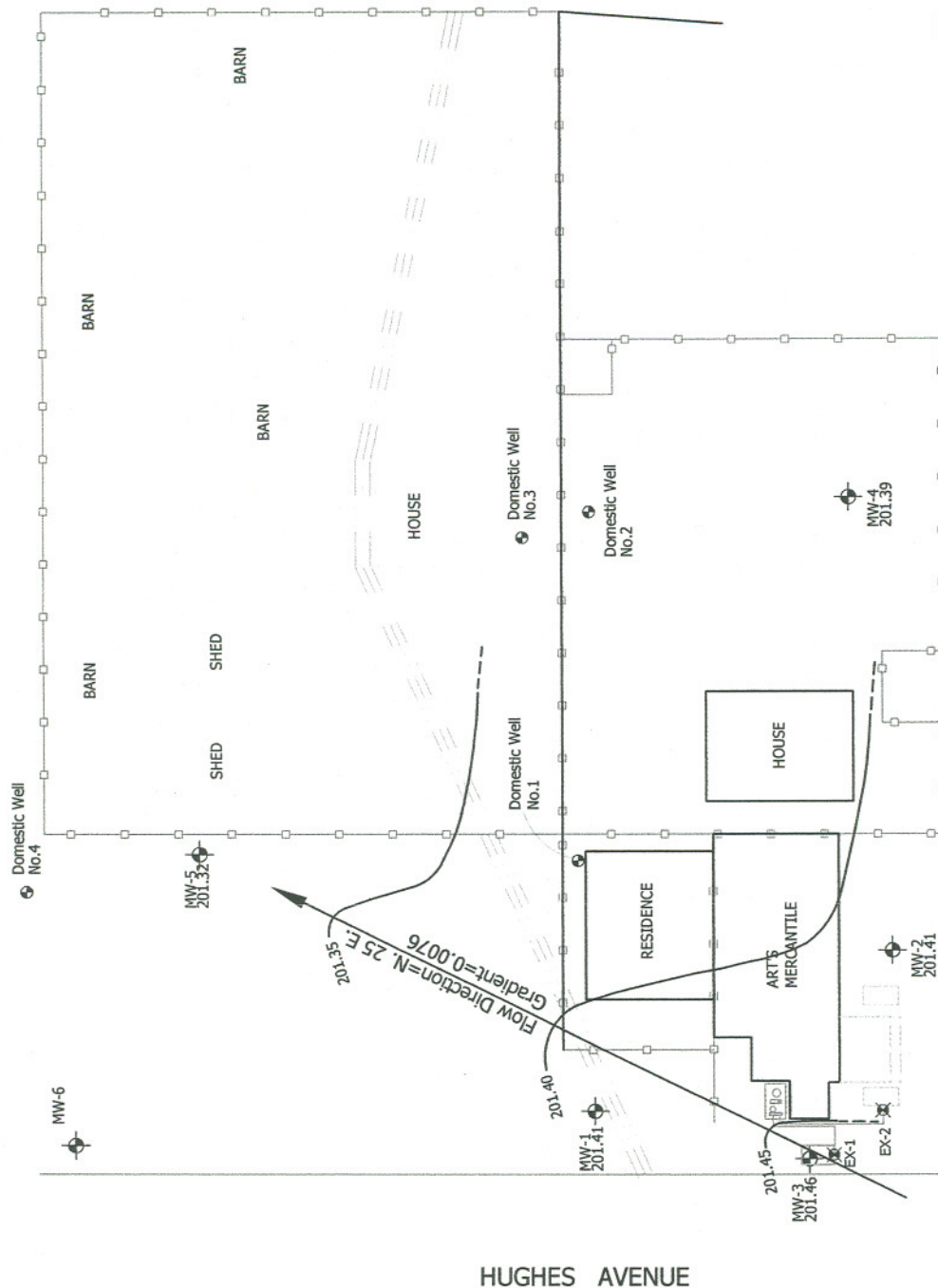
Shannon Lodge  
Geologist



*James S. Olbinski*  
James S. Olbinski  
Registered Geologist #4274

pc: Mr. Art Kanzaki, Art's Mercantile  
Mr. Jim Armstrong, Fresno County Environmental Health System





**HerSchy Environmental, Inc.**  
Environmental Consulting and Remediation

P. O. Box 229  
Bass Lake, California 93604-0229  
Tel. (559) 641-7320, Fax (559) 641-7340

JAN. 2005 GROUNDWATER CONDITIONS

Art's Mercantile

2082 W. Whites Bridge Road, Fresno, California

DATE:  
January, 2005

FILE NO.:  
A77-01.02

DRAWN BY:  
JSO

FIGURE  
1



## APPENDIX A

### GROUNDWATER SAMPLING FIELD DATA SHEETS



HerSchy Environmental WATER SAMPLE FIELD DATA SHEET

Client Name: Arts Mercantile Location: Fresno

Purged By: Gurule Sampled by: Gurule

Sample ID: MW-1 Type: Groundwater ☒ Surface Water ☐ Other ☐

Casing Diameter (inches): 2 ☒ 3 ☐ 4 ☐ 5 ☐ 6 ☐ Other ☐

Casing Elevation (feet/MSL): 277.01 Volume in Casing (gal.): 1.21

Depth of Well (feet): 83.00 Calculate Purge Volume (gal.): 3.64

Depth to Water (feet): 75.60 Actual Purge Volume (gal.): 5.0

Date Purged: 1/25/05 Date Sampled: 1/25/05 (510)

TIME	VOLUME	pH	E. C.	TEMP.	TURBIDITY
<u>1505</u>	<u>—</u>	<u>7.10</u>	<u>478</u>	<u>72.8</u>	<u>Muddy</u>
<u>1509</u>	<u>5.0</u>	<u>7.04</u>	<u>483</u>	<u>72.2</u>	<u>Murky</u>

Other Observations: \_\_\_\_\_ Odor: None

Purging Equipment: Waterra

Sampling Equipment: 11

Remarks: \_\_\_\_\_

Sampler's Signature: Jeff Fumelle



HerSchy Environmental WATER SAMPLE FIELD DATA SHEET

Client Name: Arts Mercantile Location: Fresh

Purged By: Gurule Sampled by: Gurule

Sample ID: MW-2 Type: Groundwater ☒ Surface Water ☐ Other ☐

Casing Diameter (inches): 2 ☒ 3 ☐ 4 ☐ 5 ☐ 6 ☐ Other ☐

Casing Elevation (feet/MSL): 277.52 Volume in Casing (gal.): 1.12

Depth of Well (feet): 82.96 Calculate Purge Volume (gal.): 3.37

Depth to Water (feet): 76.11 Actual Purge Volume (gal.): 4.04

Date Purged: 1/25/05 Date Sampled: 1/25/05 1610

TIME	VOLUME	pH	E. C.	TEMP.	TURBIDITY
<del>1546</del>	<del>—</del>	<del>7.30</del>	<del>478</del>	<del>71.6</del>	<del>Clear</del>
1607	—	7.23	598	70.2	Murky/Rusty
1609	4.0	6.80	580	71.1	11

Other Observations: \_\_\_\_\_ Odor: None

Purging Equipment: Watera

Sampling Equipment: 11

Remarks: \_\_\_\_\_

Sampler's Signature: Jeff Smith



HerSchy Environmental WATER SAMPLE FIELD DATA SHEET

Client Name: Arts Mercantile Location: Fresno

Purged By: Gurule Sampled by: Gurule

Sample ID: MW-3 Type: Groundwater ☒ Surface Water ☐ Other ☐

Casing Diameter (inches): 2 ☒ 3 ☐ 4 ☐ 5 ☐ 6 ☐ Other ☐

Casing Elevation (feet/MSL): 277.17 Volume in Casing (gal.): 1.24

Depth of Well (feet): 83.27 Calculate Purge Volume (gal.): 3.72

Depth to Water (feet): 75.71 Actual Purge Volume (gal.): 4.01

Date Purged: 1/25/05 Date Sampled: 1/25/05 1600

TIME	VOLUME	pH	E. C.	TEMP.	TURBIDITY
<u>1546</u>	<u>—</u>	<u>7.30</u>	<u>478</u>	<u>71.6</u>	<u>Clear</u>
<u>1550</u>	<u>4.0</u>	<u>7.18</u>	<u>436</u>	<u>71.9</u>	<u>Cloudy</u>

Other Observations:   Odor: None

Purging Equipment: Waterra

Sampling Equipment: "

Remarks:  

Sampler's Signature: Jeff Gurule



HerSchy **WATER SAMPLE FIELD DATA SHEET**  
Environmental

Client Name: Arts Mercantile Location: Fresno

Purged By: Gurule Sampled by: Gurule

Sample ID: MW-4 Type: Groundwater ☒ Surface Water ☐ Other ☐

Casing Diameter (inches): 2 ☒ 3 ☐ 4 ☐ 5 ☐ 6 ☐ Other ☐

Casing Elevation (feet/MSL): 276.80 Volume in Casing (gal.): 1.56

Depth of Well (feet): 84.92 Calculate Purge Volume (gal.): 4.68

Depth to Water (feet): 75.41 Actual Purge Volume (gal.): 5.0

Date Purged: 1/25/05 Date Sampled: 1/25/05 1625

TIME	VOLUME	pH	E. C.	TEMP.	TURBIDITY
<u>1620</u>	<u>—</u>	<u>6.80</u>	<u>529</u>	<u>69.3</u>	<u>Cloudy</u>
<u>1623</u>	<u>5.0</u>	<u>6.79</u>	<u>568</u>	<u>69.7</u>	<u>11</u>

Other Observations:   Odor: None

Purging Equipment: Waterira

Sampling Equipment: 11

Remarks:  

Sampler's Signature: 



HerSchy **WATER SAMPLE FIELD DATA SHEET**  
Environmental

Client Name: Arts Mercantile Location: Fresno

Purged By: Gurule Sampled by: Gurule

Sample ID: MW-5 Type: Groundwater ☒ Surface Water ☐ Other ☐

Casing Diameter (inches): 2 ☒ 3 ☐ 4 ☐ 5 ☐ 6 ☐ Other ☐

Casing Elevation (feet/MSL): 277.37 Volume in Casing (gal.): 1.03

Depth of Well (feet): 82.30 Calculate Purge Volume (gal.): 3.08

Depth to Water (feet): 76.05 Actual Purge Volume (gal.): 4.4

Date Purged: 1/25/05 Date Sampled: 1/25/05 1530

TIME	VOLUME	pH	E. C.	TEMP.	TURBIDITY
<u>1524</u>	<u>-</u>	<u>6.93</u>	<u>555</u>	<u>70.4</u>	<u>Clear</u>
<u>1529</u>	<u>4.0</u>	<u>6.77</u>	<u>558</u>	<u>71.3</u>	<u>Cloudy</u>

Other Observations:   Odor: None

Purging Equipment: Waterria

Sampling Equipment:  

Remarks:  

Sampler's Signature: Jeff D. Jank



HerSchy Environmental WATER SAMPLE FIELD DATA SHEET

Client Name: Arts Mercantile Location: Fresno

Purged By: Gurule Sampled by: Gurule

Sample ID: MW-6 Type: Groundwater ☒ Surface Water ☐ Other ☐

Casing Diameter (inches): 2 ☒ 3 ☐ 4 ☐ 5 ☐ 6 ☐ Other ☐

Casing Elevation (feet/MSL): 276.52 Volume in Casing (gal.): NA

Depth of Well (feet): 86.25 Calculate Purge Volume (gal.): J

Depth to Water (feet): NA Actual Purge Volume (gal.): J

Date Purged: NA Date Sampled: NA

TIME	VOLUME	pH	E. C.	TEMP.	TURBIDITY

Other Observations: NA Odor: NA

Purging Equipment: NA

Sampling Equipment: NA

Remarks: Unable to locate well. Quite possibly under very large puddle of water. 1/25/05

Sampler's Signature: Jeff M...

APPENDIX B

GROUNDWATER MONITORING  
CERTIFIED ANALYTICAL RESULTS AND  
CHAIN-OF-CUSTODY DOCUMENTATION



# CASTLE ANALYTICAL LABORATORY

Environmental Testing Services  
Certificate #2480

2333 Shuttle Drive, Atwater, CA 95301

Phone: (209) 384-2930  
Fax: (209) 384-1507

HerSchy Environmental  
P.O. Box 229  
Bass Lake, CA 93604  
Attn: Shannon Lodge

Client Project ID: Art's Mercantile - Fresno  
Reference Number: 7754  
Sample Description: Water  
Sample Prep/Analysis Method: EPA 5030/8015M, 8020  
Lab Numbers: 7754-1W, 2W, 3W, 4W, 5W

Sampled: 01-25-05  
Received: 01-25-05  
Extracted: 01-28-05  
Analyzed: 01-28-05  
Reported: 02-02-05

## TOTAL PETROLEUM HYDROCARBONS - GASOLINE WITH BTEX DISTINCTION

ANALYTE	REPORTING LIMIT	SAMPLE ID	SAMPLE ID	SAMPLE ID	SAMPLE ID	SAMPLE ID
	µg/L	MW-1 (µg/L)	MW-2 (µg/L)	MW-3 (µg/L)	MW-4 (µg/L)	MW-5 (µg/L)
MTBE	0.50	ND	ND	ND	ND	ND
BENZENE	0.50	ND	ND	ND	ND	ND
TOLUENE	0.50	ND	ND	ND	ND	ND
ETHYLBENZENE	0.50	ND	ND	ND	ND	ND
TOTAL XYLENES	0.50	ND	ND	ND	ND	ND
GASOLINE RANGE HYDROCARBONS	50	ND	ND	ND	ND	ND
Report Limit Multiplication Factor:		1	1	1	1	1

Surrogate % Recovery:

FID: 88.7% / PID: 90.3% FID: 88.9% / PID: 90.8% FID: 91.7% / PID: 92.7% FID: 92.0% / PID: 93.1% FID: 94.8% / PID: 96.1%

Instrument ID:

VAR-GC1 VAR-GC1 VAR-GC1 VAR-GC1 VAR-GC1

Analytes reported as ND were not detected or below the Practical Quantitation Limit  
Practical Quantitation Limit = Reporting Limit x Report Limit Multiplication Factor

ANALYST:

Clari J. Cone

APPROVED BY:

James C. Phillips  
Laboratory Director

# CASTLE ANALYTICAL LABORATORY

Environmental Testing Services  
Certificate # 2480

2333 Shuttle Drive, Atwater, CA 95301

Phone: (209) 384-2930  
Fax: (209) 384-1507

HerSchy Environmental  
P.O. Box 229  
Bass Lake, CA 93604  
Attn: Shannon Lodge

Client Project ID: Art's Mercantile - Fresno  
Reference Number: 7754  
Sample Description: Water  
Analyst: Jim Phillips


Method: EPA 5030/8015M,8020  
Instrument ID: Var-GC1  
Extracted: 01-28-05  
Analyzed: 01-28-05  
Reported: 02-02-05

## QUALITY CONTROL DATA REPORT


ANALYTE	Gasoline	MTBE	Benzene	Toluene	Ethyl Benzene	Total Xylenes
Spike Concentration:	110	2.16	1.34	7.58	1.82	8.88
Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
LCS Batch #:	VW-1285	VW-1285	VW-1285	VW-1285	VW-1285	VW-1285
LCS % Recovery:	96.9%	86.1%	89.6%	95.9%	102%	101%
Surrogate Recovery:	96.7%	94.9%	94.9%	94.9%	94.9%	94.9%
Control Limits:	70-130 %	70-130 %	70-130 %	70-130 %	70-130 %	70-130 %
MS/MSD Batch #:	VW-1285	VW-1285	VW-1285	VW-1285	VW-1285	VW-1285
Spike Concentration:	110	2.16	1.34	7.58	1.82	8.88
MS % Recovery:	103%	43.1%	71.0%	93.9%	99.8%	103%
Surrogate Recovery:	98.9%	100%	100%	100%	100%	100%
MSD % Recovery:	102%	48.2%	70.5%	90.4%	97.1%	99.4%
Surrogate Recovery:	96.8%	97.2%	97.2%	97.2%	97.2%	97.2%
Relative % Difference:	1.56%	10.0%	0.802%	3.83%	2.72%	3.36%
Method Blank :	ND	ND	ND	ND	ND	ND
Surrogate Recovery:	91.4%	92.5%	92.5%	92.5%	92.5%	92.5%

The LCS (Laboratory Check Sample) is a control sample of known, interferent free matrix that is fortified with representative analytes and analyzed using the same reagents, preparation and analytical methods employed for the samples. The LCS % recovery is used for validation of sample batch results. Due to matrix effects, the QC limits and recoveries for MS/MSD's are advisory only and are not used to accept or reject batch results.

APPROVED BY:

  
Clari J. Cone  
Laboratory Manager

APPROVED BY:

  
James C. Phillips  
Laboratory Director



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## CHAIN OF CUSTODY

Certificate No. 2480

PAGE 1 OF 1

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## APPENDIX C

### AIR QUALITY MONITORING FIELD DATA SHEETS



HerSchy  
Environmental

AIR MONITORING FIELD DATA SHEET

Client/Project Number: Art's Mercantile

Location: Fresno

Date: 9/2/04 Time: 1405 Sampler: Frank Dehans

Type of Monitoring/Sampling: air quality

Monitoring/Sampling Equipment: 550B, DA30, Vacuum pump

Complete Form as Appropriate. Indicate Where Not Applicable:

Number of samples/sampling locations: 2 locations, 1 sample

Hours of Operation: 449.90 Percent Operating: 95%

Inflow Concentration: 274 Exhaust Concentration: 5.1

Other Samples/Sampling Locations: hours: 5807.6  
airflow: 142

Comments/Observations:

HerSchy  
Environmental

AIR MONITORING FIELD DATA SHEET

Client/Project Number: art's Mercantile

Location: Fresno

Date: 10/18/04 Time: 1450 <sup>Fresh</sup> ~~1550~~ Sampler: Franz Bohann

Type of Monitoring/Sampling: air quality

Monitoring/Sampling Equipment: 580B, TSI, Vacuum Pump

Complete Form as Appropriate. Indicate Where Not Applicable:

Number of samples/sampling locations: 2 measurements, 1 sample

Hours of Operation: 1104.50 Percent Operating: 100%

Inflow Concentration: 31.6 Exhaust Concentration: 3.7

Other Samples/Sampling Locations: hours: 6912.4/1104.7  
air: 105 cfm

Comments/Observations: Running good



HerSchy  
Environmental

AIR MONITORING FIELD DATA SHEET

Client/Project Number: Arts Mercantile

Location: Fresno

Date: 11/2/04 Time: 0950 Sampler: Frank Deham

Type of Monitoring/Sampling: air quality

Monitoring/Sampling Equipment: 2 ~~8~~ 580B, TSI,  
Vacuum pump

Complete Form as Appropriate. Indicate Where Not Applicable:

Number of samples/sampling locations: 281

Hours of Operation: 355.90 Percent Operating: 99.9%

Inflow Concentration: 20.5 Exhaust Concentration: 0

Other Samples/Sampling Locations: Hours: 7.268.3 (355.9)  
air: 73.0

Comments/Observations: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

HerSchy  
Environmental

AIR MONITORING FIELD DATA SHEET

Client/Project Number: Art's Mercantile

Location: Fresno

Date: 12-8-04 Time: 9:55 Sampler: Oscar

Type of Monitoring/Sampling: air

Monitoring/Sampling Equipment: PJO Sampling Pump  
flow rate meter

Complete Form as Appropriate. Indicate Where Not Applicable:

Number of samples/sampling locations: 2

Hours of Operation: 7628.5 Percent Operating: 98%

Inflow Concentration: 0 Exhaust Concentration: 0

Other Samples/Sampling Locations: Influent - Effluent

Hour meter 11/2/04 = 7268.3 ∴ Hours of opp. = 360.2

Comments/Observations: \_\_\_\_\_

restart Unit Vacuum Tank full water  
Flow rate 1245 FPM = 27.15 CFM

Temp. 67°



HerSchy  
Environmental

AIR MONITORING FIELD DATA SHEET

Client/Project Number: ART'S MERCANTILE A77-01

Location: FRESNO

Date: 1-19-05 Time: 10:30 Sampler: NELSON

Type of Monitoring/Sampling: AIR

Monitoring/Sampling Equipment: \_\_\_\_\_

Complete Form as Appropriate. Indicate Where Not Applicable:

Number of samples/sampling locations: 2 INFLUENT EFFLUENT

Hours of Operation: \_\_\_\_\_ Percent Operating: 100%

Inflow Concentration: 177.2 ppm Exhaust Concentration: 3.1 ppm

Other Samples/Sampling Locations: AIR FLOW IN = 65.0

Comments/Observations: BAG SAMPLES TAKEN

APPENDIX D

AIR QUALITY MONITORING  
CERTIFIED ANALYTICAL RESULTS AND  
CHAIN-OF-CUSTODY DOCUMENTATION



# CASTLE ANALYTICAL LABORATORY

Environmental Testing Services  
Certificate # 2480

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(209) 384-2930  
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HerSchy Environmental  
P.O. Box 229  
Bass Lake, CA 93604  
Attn: Frank DeMaris

Client Project ID: Art's Mercantile - Fresno  
Reference Number: 7469  
Sample Description: Air  
Sample Prep/Analysis Method: 5030/8015M, 8020  
Lab Number: 7469-1V  
Sample ID: Influent

Sampled: 10-18-04  
Received: 10-19-04  
Analyzed: 10-19-04  
Reported: 10-25-04

## TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE WITH BTEX DISTINCTION

ANALYTE	PQL* (ug/L)	PQL* (ppmv)	AMOUNT (ug/L)	AMOUNT (ppmv)
MTBE	0.50	0.14	ND	ND
BENZENE	0.50	0.16	ND	ND
TOLUENE	0.50	0.13	1.2	0.33
ETHYL BENZENE	0.50	0.11	1.9	0.44
TOTAL XYLENES	0.50	0.11	19	4.4
GASOLINE RANGE HYDROCARBONS	50	9.7	260	63
Dilution Factor:	1			

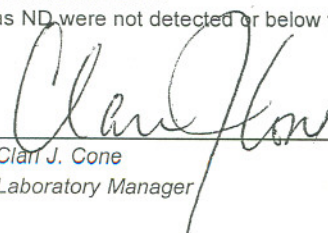
Instrument ID:

VAR-GC1


\*PQL - Practical Quantitation Limit

Analytes reported as ND were not detected or below the Practical Quantitation Limit

APPROVED BY:

  
Clarr J. Cone  
Laboratory Manager

APPROVED BY:

  
James C. Phillips  
Laboratory Director

## CHAIN OF CUSTODY

Certificate No. 2480

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HerSchy Environmental  
P.O. Box 229  
Bass Lake, CA 93604  
Attn: Frank DeMaris

Client Project ID: Art's Mercantile - Fresno  
Reference Number: 7522  
Sample Description: Air  
Sample Prep/Analysis Method: 5030/8015M, 8020  
Lab Number: 7522-1V  
Sample ID: Influent

Sampled: 11-02-04  
Received: 11-03-04  
Analyzed: 11-03-04  
Reported: 11-10-04

## TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE WITH BTEX DISTINCTION

ANALYTE	PQL* (ug/L)	PQL* (ppmv)	AMOUNT (ug/L)	AMOUNT (ppmv)
MTBE	0.50	0.14	ND	ND
BENZENE	0.50	0.16	0.84	0.26
TOLUENE	0.50	0.13	6.0	1.6
ETHYL BENZENE	0.50	0.11	2.1	0.48
TOTAL XYLENES	0.50	0.11	13	3.1
GASOLINE RANGE HYDROCARBONS	50	9.7	96	24
Dilution Factor:	1			

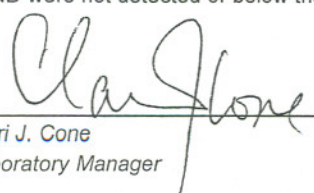
Instrument ID:

VAR-GC1


\*PQL - Practical Quantitation Limit

Analytes reported as ND were not detected or below the Practical Quantitation Limit

APPROVED BY:

  
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James C. Phillips  
Laboratory Director

## CHAIN OF CUSTODY

Certificate No. 2480

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HerSchy Environmental  
P.O. Box 229  
Bass Lake, CA 93604  
Attn: Shannon Lodge

Client Project ID: Art's Mercantile - Fresno  
Reference Number: 7609  
Sample Description: Air  
Sample Prep/Analysis Method: 5030/8015M, 8020  
Lab Number: 7609-1V  
Sample ID: Influent

Sampled: 12-08-04  
Received: 12-08-04  
Analyzed: 12-09-04  
Reported: 12-13-04

## TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE WITH BTEX DISTINCTION

ANALYTE	PQL* (ug/L)	PQL* (ppmv)	AMOUNT (ug/L)	AMOUNT (ppmv)
MTBE	0.50	0.14	ND	ND
BENZENE	0.50	0.16	ND	ND
TOLUENE	0.50	0.13	0.78	0.21
ETHYL BENZENE	0.50	0.11	ND	ND
TOTAL XYLENES	0.50	0.11	4.5	1.0
GASOLINE RANGE HYDROCARBONS	50	9.7	80	19
Dilution Factor:	1			

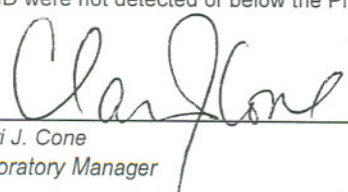
Instrument ID:

VAR-GC1


\*PQL - Practical Quantitation Limit

Analytes reported as ND were not detected or below the Practical Quantitation Limit

APPROVED BY:

  
Clari J. Cone  
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James C. Phillips  
Laboratory Director

# CASTLE ANALYTICAL LABORATORY

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HerSchy Environmental  
P.O. Box 229  
Bass Lake, CA 93604  
Attn: Shannon Lodge

Client Project ID: Art's Mercantile - Fresno  
Reference Number: 7609  
Sample Description: Air  
Sample Prep/Analysis Method: 5030/8015M, 8020  
Lab Number: 7609-2V  
Sample ID: Effluent

Sampled: 12-08-04  
Received: 12-08-04  
Analyzed: 12-09-04  
Reported: 12-13-04

## TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE WITH BTEX DISTINCTION

ANALYTE	PQL* (ug/L)	PQL* (ppmv)	AMOUNT (ug/L)	AMOUNT (ppmv)
MTBE	0.50	0.14	ND	ND
BENZENE	0.50	0.16	ND	ND
TOLUENE	0.50	0.13	ND	ND
ETHYL BENZENE	0.50	0.11	ND	ND
TOTAL XYLENES	0.50	0.11	0.79	0.18
GASOLINE RANGE HYDROCARBONS	50	9.7	ND	ND
Dilution Factor:	1			

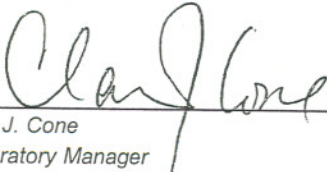
Instrument ID:

VAR-GC1


\*PQL - Practical Quantitation Limit

Analytes reported as ND were not detected or below the Practical Quantitation Limit

APPROVED BY:

  
Clari J. Cone  
Laboratory Manager

APPROVED BY:

  
James C. Phillips  
Laboratory Director



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## CHAIN OF CUSTODY

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HerSchy Environmental  
P.O. Box 229  
Bass Lake, CA 93604  
Attn: Shannon Lodge

Client Project ID: Art's Mercantile - Fresno  
Reference Number: 7735  
Sample Description: Air  
Sample Prep/Analysis Method: 5030/8015M, 8020  
Lab Number: 7735-1V  
Sample ID: Influent

Sampled: 01-19-05  
Received: 01-20-05  
Analyzed: 01-20-05  
Reported: 01-25-05

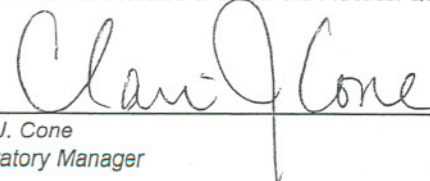
## TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE WITH BTEX DISTINCTION

ANALYTE	PQL* (ug/L)	PQL* (ppmv)	AMOUNT (ug/L)	AMOUNT (ppmv)
MTBE	0.50	0.14	ND	ND
BENZENE	0.50	0.16	ND	ND
TOLUENE	0.50	0.13	ND	ND
ETHYL BENZENE	0.50	0.11	0.66	0.15
TOTAL XYLENES	0.50	0.11	6.8	1.6
GASOLINE RANGE HYDROCARBONS	50	9.7	120	30
Dilution Factor:	1			


VAR-GC1

Quantitation Limit

ND were not detected or below the Practical Quantitation Limit

  
J. Cone  
Laboratory Manager

APPROVED BY:

  
James C. Phillips  
Laboratory Director



# CASTLE ANALYTICAL LABORATORY

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HerSchy Environmental  
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Bass Lake, CA 93604  
Attn: Shannon Lodge

Client Project ID: Art's Mercantile - Fresno  
Reference Number: 7735  
Sample Description: Air  
Sample Prep/Analysis Method: 5030/8015M, 8020  
Lab Number: 7735-2V  
Sample ID: Effluent

Sampled: 01-19-05  
Received: 01-20-05  
Analyzed: 01-20-05  
Reported: 01-25-05

## TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE WITH BTEX DISTINCTION

ANALYTE	PQL* (ug/L)	PQL* (ppmv)	AMOUNT (ug/L)	AMOUNT (ppmv)
MTBE	0.50	0.14	ND	ND
BENZENE	0.50	0.16	ND	ND
TOLUENE	0.50	0.13	ND	ND
ETHYL BENZENE	0.50	0.11	ND	ND
TOTAL XYLENES	0.50	0.11	3.1	0.71
GASOLINE RANGE HYDROCARBONS	50	9.7	130	32
Dilution Factor:	1			

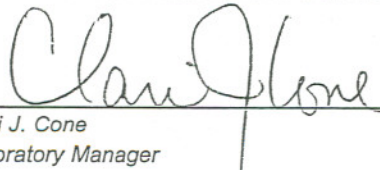
Instrument ID:

VAR-GC1


\*PQL - Practical Quantitation Limit

Analytes reported as ND were not detected or below the Practical Quantitation Limit

APPROVED BY:

  
Clari J. Cone  
Laboratory Manager

APPROVED BY:

  
James C. Phillips  
Laboratory Director

**ORIGINAL FAX**

## CASTLE ANALYTICAL LABORATORY

Location: 2333 Shuttle Drive, Bldg 908/909, Atwater, CA 95301

Certificate No. 2480

**Mailing Address:** 2333 Shuttle Drive, Atwater, CA 95301

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